

GILLENMOT, L.

Distr: 4820

100. Nitriding titanium steels. (In German) In: GILLENMOT, L. M. T. S. M. I. R. V. Periodica Polytechnica, Engineering, Vol. 2, 1958, No. 1, pp. 1-17, 8 figs., 2 tabs.

The endurance limit of steels measured on polished test specimens increases in proportion with their tensile strength. With sharply notched specimens however the endurance limit of high-tensile tempered steels hardly differs from that of low-tensile mild steels. Nitriding is very suitable for increasing the endurance limit of sharply notched machine parts but the lengthy processing prevents its widespread use. Steels alloyed with titanium may be nitrided independent of their composition in a very short time, a case thickness of 0.7-0.8 mm can be obtained in 3 hours. Hardness and character of the nitrided case are a function of the Ti to C ratio. A relatively soft, deformable case may be developed on steels when the Ti to C ratio is less than 4, max. case hardness is 600 DPH, hardness gradually reduces in the direction of the core. The second group of nitriding titanium steels is constituted of steels possessing a Ti to C ratio exceeding 4. These steels can be nitrided to considerable hardness, hardness increases in proportion to the Ti to C ratio, e.g. with Ti:C = 20 a case hardness of 1400 DPH is attained. The hardness of these hard nitrided cases is uniform, decreasing abruptly in the direction of the core. The endurance limit of nitrided and then polished specimens made of soft-nitrided steels attains that of high-tensile tempered steels, in a sharply notched state their endurance limit exceeds that of notched tempered steel specimens by about 50%.

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GILLNET, L.

The tale of the testing of materials in up-to-date machine sizing. In German.  
p. 251.

PERIODICA POLYTECHNICA. ENGINEERING. (Budapest Műszaki Egyetem.)  
Budapest, Hungary. Vol. 2, no. 4, 1958.

Monthly list of East European Acquisitions (EEAI) 10, vol. 8, no 2, <sup>July</sup> 1959.

Uncl.

GILLEMOT, Laszlo, dr., Kossuth-dijas, egyetemi tanar

Scientific research and the innovation movement. Ujit lap 12 no.19:  
7-8 10 0 '60.

1. Magyar Tudomanyos Akademia levelezo tagja.

GILLETOT, J.

Experiences with a new kind of diploma. worl. p. 117.

PERIODICA POLYTECHNICA. ENGINEERING. (Budapesti Műszaki Egyetem, Budapest, Hungary. Vol. 3, no. 3, 1959.

Monthly List of East European Accessions (EEA), I.C. Vol. 3, no. 12, Dec. 1959.

Uncl.

HORGOS, Gyula, dr., muszaki tudományok kandidátusa (Budapest); GILLEMOT,  
Iasslo, dr., ketszeres Kossuth-díjas egyetemi tanár; FREUDENTHALL,  
A. M., dr. (USA); KRAINER, E., dr. (Austria); MUCSI, Endre;  
DEVENYI, Miklos

An account of the 2d Congress of Testing of Materials. Ujit lap 13  
no.15:8 Ag '61.

1. Koho- es Gepipari miniszterhelyettes (for Horgos) 2. Columbia  
University, New York, USA (for Freudenthall) 3. Altalanos Geptervezo  
Iroda (for Mucsi) 4. Keményfemipari Vallalat (for Devenyi)

(Testing)

S/137/62/000/007/043/072  
A057/A101

AUTHORS: Gillemot, L., Ronay, M.

TITLE: Steels which show a negligible effect of cold deformation upon the tendency to brittle fracture

PERIODICAL: Referativnyi zhurnal, Metallurgiya, no. 7, 1962, 35, abstract 71201  
("Acta techn. Acad. scient. hung.", 1961, 35 - 36, 185 - 195, German)

TEXT: Reasons for the increase of the tendency to brittle fracture of steel, preliminarily treated by cold deformation (CD) were investigated, and recommendations given for the diminution of the destructive effect of CD. Fine-grained steel with 0.5% C and 0.75% Ti was investigated. The tempered steel was deformed by cold drawing with a shrinkage of 10 - 90%, and afterwards were determined  $H_v$ ,  $\sigma_{0.2}$ ,  $\sigma_b$ ,  $\psi$ , the effective stresses and specific work of rupture at tension, and also  $\alpha_k$  in dependence of the degree of CD. It is demonstrated that with an increase of the degree of CD to 25% (corresponding to the limit of uniform elongation at tension),  $H_v$ ,  $\sigma_{0.2}$ , and  $\sigma_b$  increase ( $\sigma_b$  - to 65 kg/mm<sup>2</sup>,  $\sigma_{0.2}$  - to 60 kg/mm<sup>2</sup>), while  $\psi$  decreases. The change of the mentioned characteristics is

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Steels which show a...

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connected with the formation of new slip (S) surfaces. Subsequent increase of the degree of CD to 65 - 70% does not change these characteristics, which is explained by the laminar S along the existing S surfaces. A further increase of the degree of CD effects again a rise of  $H_k$ ,  $\sigma_{0.2}$  and  $\sigma_b$  and decrease of  $\epsilon$ , which is connected with the stop of laminar S and the formation of a new front of dislocations in connection with the bending of the S planes; S becomes herewith turbulent. Already at a small CD,  $a_k$  decreases sharply about twice (to 15 - 20 kgm/cm<sup>2</sup>), and remains then up to CD 65 - 70% at this level without change. Until the same degree of CD no change occurs in the specific work of deformation. The embrittlement of steel in the CD process is connected with the presence of foreign atoms in the steel which are blocking dislocations. A considerable decrease of the tendency of steel to brittleness can be effected by adding elements to the steel which bind these atoms. There are 21 references.

A. Nikonov

[Abstracter's note: Complete translation.]

Card 2/2

GILLEMOT, L., prof. (Budapest, XI., Bertalan Lajos u.6)

Contributions to the question of rigid fragility of welded joints.  
Periodica polytechn eng 6 no.2:7-113 '62.

1. Lehrstuhl für Mechanische Technologie, Technische Universität,  
und Mitglied, Schriftleitung, "Periodica Polytechnica - Engineering".



**GILLEMOT, Laszlo. dr.**

A new type of steel usable in cold-working. Gepgyartastechn  
3 no.6:201-204, 219 Je'63.

GILLEMOT, Laszlo, prof., dr. (Budapest, XI., Bertalan L.u.7)

A new method for determining the brittleness danger. Periodica  
polytechn eng 8 no.1:1-14 '64.

1. Lehrstuhl fur Mechanische Technologie, Technische Universitat,  
Budapest. Submitted September 30, 1963.

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1. The first part of the document is a summary of the information received from the source.

2. The second part of the document is a summary of the information received from the source.

I 31357-66

SOURCE CODE: HU/2504/65/050/000/0001/0092

ACC NR: AT6021112

AUTHOR: Gillemot, L.—Zhil'mo, L. (Corresponding member HTA)

25  
B+1

ORG: none

TITLE: Simplified method for plotting Haigh and/or Smith graphs

SOURCE: Academia scientiarum hungaricae. Acta technica, v. 50, 1965, 81-92

TOPIC TAGS: graph theory, stress analysis, linear function

ABSTRACT: Affected by an alternating load superimposed onto a static mean stress, fatigue limit will be the function of the mean stress. The value of the alternating stress the superimposition of which to a given mean stress is still feasible, can be approximated by a cubical parabola. To plot the alternating stress value that can be still added to the static mean stress under a wide variety of conditions, the idea of introducing the actual stress causing fracture was introduced. Thus, it became possible to arrive at a simple linear relation between the static mean stress and the alternating stress, independent of sample shape and test temperature. The data required are only one result of static test and one result of fatigue limit test. Orig. art. has: 9 figures, 9 formulas, and 1 table. [Orig. art. in Eng.] [JPRS]

SUB CODE: 12, 20 / SUBM DATE: 16Nov64 / ORIG REF: 001 / OTH REF: 011

Card 1/1 CC

PETROV, L.P., redaktor; GILLENVA, A.V., redaktor.

[Problems of combustion; collection of translated articles]  
Voprosy goreniia. Sbornik perevodov statei. Moskva, Izd-vo  
inostranoi lit-ry. Vol. 1. 1953. 291 p. (MLRA 7:1)  
(Combustion)

GILLER, A.G.

Nikolai Mikhailovich Korobkov, 1897-1947. Vop.geog. no.51:190-'91  
'61. (MIRA 14:6)  
(Korobkov, Nikolai Mikhailovich, 1897-1947)

GILLER, A.I.

KOZHEVIN, V.G., nachal'nik; INOZEMTSEV, P.P., nachal'nik; BELEVTSSEV, T.N., upravlyayushchiy; GARYAZEV, V.V., upravlyayushchiy; GRACHEV, L.I., upravlyayushchiy; KONOVALOV, G.I., upravlyayushchiy; GILLER, A.I., nachal'nik; GUBIN, M.I., glavnyy inzhener.

The Soviet miners honor Miners' Day with new industrial victories.  
Ugol' 28 no.8:5-15 Ag '53. (MLRA 6:7)

1. Kombinat Kuzbassugol' (for Kozhevin).
2. Kombinat Karagandaugol' (for Inozemtsev).
3. Trest Stalinugol' (for Belevtsev).
4. Trest Kalininugol' (for Gryazev).
5. Trest Molotovugol' (for Grachev).
6. Trest Shchekinugol' (for Kononov).
7. Shakhtoupravlenie No.9/12 tresta Shchekinugol' (for Giller).
8. Shakhta No.34 tresta Krasnoarmeyskugol' (for Gubin). (Coal mines and mining)

GILLER, A.I., laureat Leninskoy premii; GROMOV, N.V., inzh.

Pillar extraction upon depletion of the main drifts. Ugol'  
40 no.1:19-21 Ja '65. (MIRA 18:4)

1. Shakhtoupravleniye No.11-12 tresta Shchekunugol'.



DYSKINA, T.M.; GILLER, A.S.

Clinical and anatomical characteristics of ileocolic typhoid fever. Zdrav. Tadzh. 7 no. 2:28-32 Mr-Apr '60. (MIRA 13:10)

1. Iz kafedry infektsionnykh bolezney (zav. - dotsent D.M. Khashimov) Stalinabadskogo medinstituta im. Abuali ibni Sino i Stalinabadskoy gorodskoy infektsionnoy bol'nitsy.  
(TYPHOID FEVER)

SHIRYAYEV, G.A., inzh.; GILLER, E.S., inzh.

Standardization of main structures in coal mining enterprises.  
Shakht. stroi. no.12:7-10 D '57. (MIRA 11:1)

1. Institut TSentrogiproshakhtostroy.  
(Mine buildings)

OSTROVSKIY, M.Ye.; GILLER, E.S.; CHEREPOV, I.A.; MELIKHOVA, A.A.

Design for a new type of a chemical plant. Prom. stroi. 41  
no.7:13-18 J1 '64. (MIRA 17:8)

GILLER, F.; KRAVTSOVA, A.

Quality of the pancreas. Mias. ind. SSSR 34 no.4:56-58 '63.  
(MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy  
promyshlennosti.

ROZHKOV, F.; GILLER, I.

Make available to the masses the practices of those in front.  
Metallurg 3 no.12:30-31 D '63. (MIRA 17:4)

1. Predsedatel' profsoyuznogo komiteta Magnitogorskogo metallurgicheskogo kombinata (for Rozhkov). 2. Nachal'nik normativno-issledovatel'skoy laboratorii Magnitogorskogo metallurgicheskogo kombinata (for Giller).

GILLER, I.R.

Utilization of the ANZh-2 apparatus for disinfection. Veterinariia  
33 no.5:68 My '56. (MLRA 9:8)

1. Starshiy veterinaryy vrach Vereshchaginskoy mashino-traktornoy  
stantsii, Molotovskoy oblasti.  
(Disinfection and disinfectants)  
(Spraying and dusting equipment)

GILLER, I.R.

Blomycin in the control of paratyphoid in white mice. Lab. delo  
8 [1.8.9] no.1 Ja '63. (MIRA 16:5)  
(PARATYPHOID FEVER) (AUREOMYCIN)

GILLER, I. Ye.

TRAKHTER, B.S.; GARCHENKO, V.T.; GILLER, I. Ye.; SHAROPIN, V.D., redaktor;  
MIKHAYLOV, O.A., redaktor; ~~PERMOVA, F.B.~~, tekhnicheskii redaktor.

[Operation cycle regulation in an open-hearth process plant] Regla-  
mentirovannyi rezhim raboty martenovskogo tsakha. Moskva, Gos.  
nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954.  
83 p. (MIRA 8:1)

(Steel industry) (Industrial management)



LESHCHINER, M.M.; GILMER, I.Ye.

Increasing labor productivity and reducing production costs at the  
Magnitogorsk Metallurgical Plant. Stal' 15 no.1:70-74 Ja '55.  
(MLRA 8:5)

1. Magnitogorskiy metallurgicheskiy kombinat.  
(Magnitogorsk--Metallurgical plants)

GILLER, M. , LOWIS, V.

Greater attention to income and expernditure balance of enterprise. Den. i  
kred. 11, No 6, 1952.

GILLER, M.

Enlarge the sphere of decentralized clearing-house operations. Den.  
i kred. 13 no.5:23-25 My '55. (MLRA 8:7)  
(Leningrad Province--Clearing house)

PECHENIK, M.; TARASOV, M.; RAVICH, A.; GILLER, M.; EYZENBERAUN, R.;  
PAYLOVA, D.

Clearing payments and the issue of credit on special loan  
accounts. Den. 1 kred. 16 no.4:48-59 Ap '58. (MIRA 11:5)  
(Clearinghouse)

GILLER, M.

Practice of payment organization. Den. 1 kred. 18 no.9:54-58 S '60.  
(MIRA 13:8)  
(Leningrad--Transportation, Automotive--Finance)  
(Payment)

GILLER, M. (Leningrad)

"Credit for commercial enterprises" by S.A.Skorokhodov. Reviewed  
by M.Giller. Sov. torg. 35 no.8:49-50 Ag '62. (MIRA 15:8)  
(Credit) (Retail trade) (Skorokhodov, S. A.)

GILLER, M.

Credit should be secured. Den. i kred. 21 no.7:29-30 J1 '63.  
(MIRA 16:8)  
1. Nachal'nik planovo-ekonomicheskogo otдела Leningradskoy  
oblastnoy kontory Gosbanka.  
(Leningrad Province—Credit)

~~GILLER, N.Y.~~

Processing the subtropical persimmon. Kons. 1 ov. prom. 14 no.8:  
28-30 Ag '59. (MIRA 12:9)

1. Sechinskiy konservnyy kombinat imeni Lenina.  
(Persimmon)



OYLER, M. Ye.

Experience of the V.I. Lenin Sochi Canning Combine in increasing the variety of products and combining various lines of production. Kons.i ov.prom. 15 no.4:41-42 Ap '60. (MIRA 13:6)

1. Sochinskiy konservnyy kombinat imeni V.I. Lenina.  
(Sochi--Canning industry--Equipment and supplies)

GILLER, M. Ye.

Use of sorbic acid in the preservation of fruits. Kons.1 ov.prom. 16  
no.4:21-22 Ap '61. (MIRA 14:3)

1. Sochinskiy konservnyy kombinat.  
(Fruit--Preservation)(Sorbic acid)

ROZENFEL'D, I.L.; RUBINSHTEYN, F.I.; YAKUBOVICH, S.V.; PERSIANTSEVA, V.P.;  
Prinimali uchastiye: GILLER, R.S.; KURSKAYA, A.G.

Studying chrome acid guanidine as a corrosion inhibitor for oil  
paints. Lakokras.mat.i ikh prin. no.3:15-21 '62. (MIRA 15:7)  
(Protective coatings)  
(Guanidine)

VOITKOVICH, S.I.; GILDER, M.Ye.; GOLITSKY, M.S.; JONES, A.A.;  
ELIASHVILI, I.M.; JONES, M.Ye.

Production of fodder and defluorinated fertilizer phosphate.  
Zhuk. prom. 41 no.1:19-22 Jan '65.

(TRA 18:3)

GILLER, S. A.

Giller, S. A. - "On the possible cause of bactericidal activity of certain organic compounds, in particular a derivative furan series," Izvestiya Akad nauk Latv. SSR, 1948, No. 12, p. 15-44, - Annotation in Latvian - Bibliog: 28 items

SO: U-4355, 14 August 53, (Latopis 'Zhurnal 'nykh Statey, No. 12, 1949.)

HILLERS, S.

5

Chem Abs V48

1-25-54

Electronic Phenomena

Ultraviolet absorption spectra of 2-nitro-1,3-indandione.  
(I. Vanage, J. Bidusa, and S. Hillers. *Lateijas P.S.R. Zinatnu Akad. Vestis* 1949, No. 8 (Whole No. 25), 21-39 (Russian summary, 39-40).) — Absorption spectra of 2-nitro-1,3-indandione (I) and its salts were detd. in many solvents. In highly dil. aq. soln., the nitroindandione ion is the absorbing agent, and can be represented as a resonance hybrid of 3 out of a no. of possible valence structures. In solvents of low dielec. const. such as ether and dioxane, in which the energy of shifting of the electrons is high, the enol form slowly transfers into the diketo form; the rate of reaction is proportional to the dielec. const. In 100% H<sub>2</sub>SO<sub>4</sub>, the absorption is by a mol. form of I, characterized by a superposition of 3 other electronic structures; this form is an intermediate between the diketo and the enol forms. The spectrum of the Et ester of the indandionecarboxylic acid had analogous form, but with the absorption max. shifted by 700 Å. towards higher frequency, which can be explained by structural considerations. Salts of I became colored on storage, and the spectra indicated that this is caused by intramol. shifts. A decrease in the ionization potential of the cation facilitates the formation of structures which absorb in the visible. The high ionization potential of Hg prevents formation of an ionic link and the salt of Hg with I remains colorless. Arguments in favor of H bonding in I are given. A. Dravnieks

10/26/54

# STUDIES OF THE

[illegible]

Octadecanoic acid was purified to stearic acid. S. (H<sub>2</sub>C=CH)<sub>17</sub>COOH and A. (H<sub>2</sub>C=CH)<sub>17</sub>COOH. S. Ziegler (20), (1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 26



1. HILLERS, S.
2. SSSR (600)
4. Nitrofuraz
7. Activities of the Academy of Sciences of the Latvian S. S. R. on the industrial application and medical acceptance of new drugs.  
Latv. PSR Zin. Akad. Vestis No. 12, 1950
9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

HILLERS, S.



Oxidation of furan to maleic anhydride by atmospheric oxygen in vapor-liquid phase over a catalyst from oxides of vanadium. P. Kaimova, S. Hillers, and M. Tarvid. Latvian SSR Zinatnu Akad. Vestis 1991, 443-52. — Passage of air-furan mixts. through a glass tube over  $V_2O_5$ -pumice catalyst give the following conversions to maleic anhydride. The best results are had with 2 sec. contact and a molar ratio of air to furan of 120-100 at 325°, when an 81-3% yield is secured (92-4% taking into account unreacted furan). It is suggested that the reaction proceeds by formation of the 2,5-di-HO deriv., which yields the 2,5-oxo deriv. or suffers ring cleavage with formation of  $HO_2CCH_2CH:CHCHO$ , which yields a lactone. Over a pure  $V_2O_5$  catalyst some 27% furan is oxidized to  $CO_2$ - $H_2O$  and only 13% yields maleic anhydride; when the catalyst is fully "developed" with use and consists largely of  $V_2O_5$ , some 46% conversion to maleic anhydride occurs. The high yields cited above result from a catalyst consisting of both  $V_2O_5$  and  $V_2O_4$ . G. M. K.

*mf*

GILLERS, S.

1. HILLERS, S.; EYDUSS, J.
2. USSR 600
4. Nitrofurans
7. Ultraviolet absorption spectra of some nitrofurans, Latv. PSR Zin. Akad. Vestis, No. 8, 1951.

9. Monthly List of Russian Accessions, Library of Congress. April 1953, Uncl.

1. HILLEPS, S.; BERZINA, A.
2. USSR 600
4. Nitrofuran
7. Crystalline modifications of 5-nitro-2-furfurylidene-aminoguanidine sulfate,  
Latv. PSR Zin. Akad. Vestis, No. 11, 1951.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

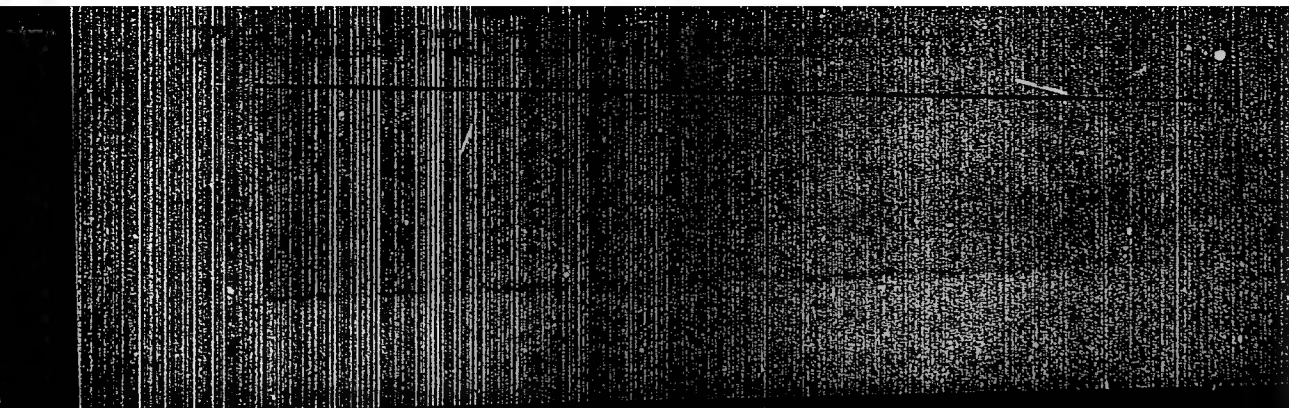


Calculation of the rate of furfural vaporization with air flow rate of 1000 ml/min, and at 100°C. (L. V. Kozlov, *Chem. Abstr.*, 1952, No. 12, 12766c) The rate of furfural vaporization was measured by observing the volume of air flowing through the absorption of furfural vapor from the air in 450-cm. pressure and 500-575°C. The catalysts used were:  $\text{V}_2\text{O}_5$  (I),  $\text{SnO}_2$  (II),  $\text{Al}_2\text{O}_3$  (III),  $\text{Fe}_2\text{O}_3$  (IV),  $\text{ZnO}$  (V),  $\text{MgO}$  (VI),  $\text{CaO}$  (VII),  $\text{BaO}$  (VIII),  $\text{SrO}$  (IX),  $\text{PbO}$  (X),  $\text{CuO}$  (XI),  $\text{NiO}$  (XII),  $\text{CoO}$  (XIII),  $\text{MnO}$  (XIV),  $\text{Mn}_2\text{O}_3$  (XV),  $\text{Fe}_2\text{O}_3$  (XVI),  $\text{Fe}_3\text{O}_4$  (XVII),  $\text{Fe}_2\text{SO}_4$  (XVIII),  $\text{Fe}_2(\text{SO}_4)_3$  (XIX),  $\text{Fe}_2(\text{SO}_4)_4$  (XX),  $\text{Fe}_2(\text{SO}_4)_5$  (XXI),  $\text{Fe}_2(\text{SO}_4)_6$  (XXII),  $\text{Fe}_2(\text{SO}_4)_7$  (XXIII),  $\text{Fe}_2(\text{SO}_4)_8$  (XXIV),  $\text{Fe}_2(\text{SO}_4)_9$  (XXV),  $\text{Fe}_2(\text{SO}_4)_{10}$  (XXVI),  $\text{Fe}_2(\text{SO}_4)_{11}$  (XXVII),  $\text{Fe}_2(\text{SO}_4)_{12}$  (XXVIII),  $\text{Fe}_2(\text{SO}_4)_{13}$  (XXIX),  $\text{Fe}_2(\text{SO}_4)_{14}$  (XXX),  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$\text{Fe}_2(\text{SO}_4)_{105}$  (LXXXXXXXI),  $\text{Fe}_2(\text{SO}_4)_{106}$  (LXXXXXXII),  $\text{Fe}_2(\text{SO}_4)_{107}$  (LXXXXXXIII),  $\text{Fe}_2(\text{SO}_4)_{108}$  (LXXXXXXIV),  $\text{Fe}_2(\text{SO}_4)_{109}$  (LXXXXXXV),  $\text{Fe}_2(\text{SO}_4)_{110}$  (LXXXXXXVI),  $\text{Fe}_2(\text{SO}_4)_{111}$  (LXXXXXXVII),  $\text{Fe}_2(\text{SO}_4)_{112}$  (LXXXXXXVIII),  $\text{Fe}_2(\text{SO}_4)_{113}$  (LXXXXXXIX),  $\text{Fe}_2(\text{SO}_4)_{114}$  (LXXXXXXX),  $\text{Fe}_2(\text{SO}_4)_{115}$  (LXXXXXXXI),  $\text{Fe}_2(\text{SO}_4)_{116}$  (LXXXXXXII),  $\text{Fe}_2(\text{SO}_4)_{117}$  (LXXXXXXIII),  $\text{Fe}_2(\text{SO}_4)_{118}$  (LXXXXXXIV),  $\text{Fe}_2(\text{SO}_4)_{119}$  (LXXXXXXV),  $\text{Fe}_2(\text{SO}_4)_{120}$  (LXXXXXXVI),  $\text{Fe}_2(\text{SO}_4)_{121}$  (LXXXXXXVII),  $\text{Fe}_2(\text{SO}_4)_{122}$  (LXXXXXXVIII),  $\text{Fe}_2(\text{SO}_4)_{123}$  (LXXXXXXIX),  $\text{Fe}_2(\text{SO}_4)_{124}$  (LXXXXXXX),  $\text{Fe}_2(\text{SO}_4)_{125}$  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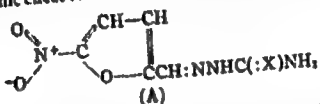




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**Andrew Dravnick**

(3)  
Some investigations of the ultraviolet absorption spectra of nitrofurans. S. A. Gilier and M. O. Boldakova. *Izvest. Akad. Nauk S.S.S.R. Ser. Fiz.* 17, 708-14 (1953).  
Absorption spectra of the following furans were investigated and calculated: furan, furfural, 2-nitrofuran, 5-nitrofuran, 5-nitrofurfural diacetate, 5-nitrofurfural semicarbazone, 5-nitrofurfural glycidylhydrazide, 5-nitrofurfural di-  
chloroacetylhydrazide,  $\beta$ -(5-nitrofurfurylideneamino)benz-  
aldehyde thiosemicarbazone, 5-nitrosylan. The introduc-  
tion of the nitro group shifts the absorption band to longer  
wave lengths. From the identity of nitrofuran and nitro-  
furfural spectra in  $H_2O$  and the difference in glycerol solu-  
tion it can be concluded that nitrofurfural forms a hydrate. The  
bathochromic effect of the compds. of the type A is as follows:



for  $X = S \lambda = 363 \text{ m}\mu$ ; for  $X = O \lambda = 375 \text{ m}\mu$ ; for  $X = \text{NH} \lambda = 385 \text{ m}\mu$ . In alk. medium, pH 13, the absorption curve of a cherry-red soln. of nitrofurfural changes radi-  
cally; a max. appears at  $350 \text{ m}\mu$ . It is assumed that a neg-  
atively charged ion appears in alk. media. If the CHO group is  
replaced by H, Me, or Br, no coloration appears.  
S. Pakawtz

11-10-54

Institut lesokhospaystvennkh problem Akademii nauk Latvyskoy  
SSR.

GILLER, S. A.

Dissertation: "Investigation of Methods of Synthesis. Physicochemical Properties, and Interrelation Between the Structure and Biological Activity of Some Substituted Derivatives of 5-Nitrofurfurilidenimines." Cand Chem Sci, Inst of Forestry Problems, Acad Sci Latvian SSR, Riga, 1953. (Referativnyy Zhurnal--Khimiya, Moscow, No 12, Jun 54)

SO: SUM 318, 23 Dec 1954

GILLER, S. A. -- "Study of the Methods of Synthesis, Physicochemical Characteristics, and Interrelationship Between the Structure and Biological Action of Certain Substituted 5-Nitrofurfurylidenimines." Acad Sci Latvian SSR, Inst of Forestry Problems 1954 (Dissertation for the Degree of Candidate of Chemical Sciences)

SO: Izvestiya Ak. Nauk Latvyskoy SSR, No. 9, Sept., 1955



AUTHOR: YANUSHKOVSKIY, V.YA., GILLER, S.A. PA - 2315  
TITLE: The Conference at Riga on the Use of Radio Isotopes. (Konferentsiya v Rige po primeneniyu radioizotopov, Russian).  
PERIODICAL: Atomnaya Energiya, 1957, Vol 2, Nr 3, pp 285 - 286 (U.S.S.R.)  
Received: 4 / 1957 Reviewed: 5 / 1957  
ABSTRACT: In December 1956 a scientific conference of the Academy of Science of the Latvian S.S.R. was held at Riga, dealing with the use of radioactive isotopes in technology, biology, and medicine, in which also scientists from Moscow, Leningrad, Tallin (Reval), Wilna, and other cities participated. The president of the Latvian Academy of Science reported that the institutes of this Academy carried out a number of investigations dealing with this subject within recent years. It is the task of this conference to demonstrate the principles on which these investigations were based.

Individual lectures dealt among others with the following subjects: The main trends in the application of radioactive isotopes in devices for automatic control, the application of radioactive isotopes within the field of medicine and biology, the application of gas discharge counters in contactless radioactive relays, radioactive marking of steels under industrial conditions in the Leningrad Steel Rolling Mill "MOLOTOV", the use of a radioactive donor in the device for automatic transition from one tele-

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The Conference at Riga on the Use of Radio Isotopes.

kinematic projector to another in the telecenter of Riga, the radioactive indicators of the level of liquids in covered containers, a radioactive control device for the filling of non-transparent containers in assembly line production, the practical application of radioactive, regulating- and signalling devices worked out in the Physical Institute of the Academy of Science of the Latvian S.S.R. (in cooperation with the factory "BEF"), various wiring circuits for radioactive relays in gas discharge counters, the experimental application of gamma rays for the radiosopic investigation of a thin metal, the application of scintillation counters in gamma-defectoscopy, the determination of the thickness of steel from the scattered gamma radiation, the attenuation of a parallel gamma bundle in layers of matter, the qualitative analysis of a mixture of radioactive isotopes from the half value periods, radioactive marked bacteria, the study of the penetration of pentode and other substances into the lignin by means of radiocarbon, the investigation of the dynamics of the shifting of chemical stimulators in the trunks of fir trees with radioactive phosphorus, the exchange of calcium in the organism of chickens (?), etc. In a resolution also work with stable isotopes and mass spectrographs was described as necessary.

Card 2/3



WILKES, S.

OF FRAI.

**PERIODICALS: VESTIS No.1, 1958**

WILKES, S. Determination of nitrofurans solubility in water by the help of  
polyacrylamide. In Russian. 113 p.

Monthly list of East European Accessions (EEAA) 10, Vol. 3, No. 2,  
February 1958, Unclass.

GILLER, S. A.

"Informed the assembly of the intention of Latvia (latviya) scientists to carry out research on the use of natural polymers"

**report presented at the session of the Presidium of the Council for Co-ordination of Scientific Work of the Academies of Sciences of Union Republics and Branches (on Development of Researches on Highly Molecular Compounds)  
21 June 1958. (Vest. Ak Nauk SSSR, 1958, No. 9, pp. 101-104)**

Corresponding Member, AS Latviyskaya SSR

Synthesis of the ester of 2-acetylthiophene. N. Goldshole and S. G. Kuznetsov. *Usp. Khim.* 1955, 24, 1045; *Chem. Abstr.* 1956, 50, 12257. *Usp. Khim.* 1955, 24, 1045. — The title compound is derived from 2-acetylthiophene (I) (the bromo- and amino-derivatives, sulfonium, and sulfonate esters, and also the sulfoxide derivative were studied). The ester of I is 2-methyl-2-acetylthiophene (II) was carried out according to H. Dieckmann (Rigs, 1935), except that the reaction mixture (HNO<sub>3</sub> acid) was lowered to 1-1.5 mole for 1 mole of I (85-87% conv.). H<sub>2</sub>SO<sub>4</sub> was added; the nitration was carried out at 90° temp. during 1-1.5 hr. The process of decarboxylation of the intermediate product and the ester. of II was simplified. Under the above conditions the I was obtained as a solid product (in the case in the HCl method C<sub>10</sub>H<sub>8</sub>S<sub>2</sub>, 26, 2456). Expts. showed that decreasing of 1 mole the amount of HNO<sub>3</sub> in the mixture decreases the yield of II to 83%. The highest yield of 1.68% was obtained when nitration was carried out at 90° and 1-1.5 mole H<sub>2</sub>SO<sub>4</sub> per mole of I. The yield was 1.68% with 1.5 mole H<sub>2</sub>SO<sub>4</sub> and 1 mole of I. The purification of ester II with 90% ethanol was unnecessary. The ester of I was purified by crystallization from 90% EtOH and 5% Et<sub>2</sub>O. The melting point was 100-101° and the refractive index was 1.4720. The ester of I was purified by crystallization from 90% EtOH and 5% Et<sub>2</sub>O. The melting point was 100-101° and the refractive index was 1.4720. The ester of I was purified by crystallization from 90% EtOH and 5% Et<sub>2</sub>O. The melting point was 100-101° and the refractive index was 1.4720.

piperidine, and 1-methylpyrrolidine was investigated for the  
 1st time. Similarly to phenacyl bromide, III reacted with  
 equimolar amts. of the above-mentioned tertiary amines in  
 abs. Et<sub>2</sub>O to give high yields of the corresponding ammonium  
 salts. III reacted analogously with hexamethylenetetra-  
 mine in various org. solvents, e.g. in alc., CHCl<sub>3</sub>, PhCl,  
 and CCl<sub>4</sub>, at room temp., to give a high yield of 2-furacyl hexa-  
 methylenetetrammonium (IV) salt (88% in CHCl<sub>3</sub>). The  
 splitting of IV bromide by HCl in an alc. medium yielded  
 0.2 2-aminoacetylthiuran-HCl (V.HCl), which treated with  
 HClO<sub>4</sub> yielded V.HClO<sub>4</sub>. The acetylation of V.HCl by an  
 emulsion of Ac<sub>2</sub>O in H<sub>2</sub>O at 0° with the addn. of NaHCO<sub>3</sub>  
 yielded 81% 2-acetamidocetylthiuran (VI). The hydroxy-  
 methylation of VI with 36% a. HCHO at 35° in the pres-  
 ence of NaHCO<sub>3</sub> yielded 60% 1-(α-furcyl)-2-acetamido-3-hy-  
 droxy-1-propanone (VII). The 5-nitro deriv. of III with  
 hexamethylenetetramine in CHCl<sub>3</sub> yielded 79% 5-nitro-2-  
 furacylhexamethylenetetrammonium bromide (VIII). VIII  
 treated with HCl in an alc. soln. yielded 18% 5-nitro-2-  
 aminoacetylthiuran-HCl (IX.HCl), which was sepd. from the  
 mixt. by pptn. with acetone after filtration of the ammonium  
 salts. Contrary to V.HCl, IX.HCl was stable, hygroscopic,  
 and unstable. Owing to a high sensitivity towards alkali  
 agents, 1-nitro-2-bromocetylthiuran (X) did not form NH<sub>4</sub>  
 salts with secondary and tertiary amines. Ac<sub>2</sub>O in glacial  
 AcOH and X yielded 5-nitro-2-acetylthioacetylthiuran  
 (XI) which hydrolyzed to 5-nitro-2-hydroxyacetylthiuran (XII).  
 A simpler method of substitution of Br in X by the hydroxy-  
 group by the action of Na formate in MeCO<sub>2</sub>H, on heating,  
 did not give pos. results. In an analogous manner 0.00% 2-  
 hydroxyacetylthiuran was obtained from XII, and only 12% of  
 the action of HNO<sub>3</sub> on V.HCl. The hydrazine deriv. of

D151x1 LB20(1)/LB3d

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21, 282-3° (decomp.); XV.  $\text{NNHCOCONHCH}_2\text{CH}_2\text{OH}$ , 59, 218-14° (decomp.);  $\text{CH}(\text{NHAc})\text{CH}_2\text{OH}$ ,  $\text{NNHC}_2\text{H}_5$ , (NO<sub>2</sub>), 2,4, 98, 254-0° (decomp.);  $\text{CH}_2\text{N}(\text{CH}_3)_2\text{OCH}_2\text{CH}_2$

HCl,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 2,4, —, 175-9° (decomp.);  $\text{CH}_3\text{SO}_2\text{Me}$ ,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 2,4, 68, 177-8° (decomp.);  $\text{CH}_3\text{SO}_2\text{Et}$ ,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 2,4, 68, 194-5° (decomp.);  $\text{C}_6\text{H}_5\text{I}$ ,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 35, 148-9° (decomp.);  $\text{CH}_3\text{I}$ ,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 48, 155-7° (decomp.);  $\text{R}^1 = \text{p-tolyl}$ ,  $\text{CH}_3\text{OAc}$ ,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 77, 201-2° (decomp.);  $\text{CH}_3\text{SO}_2\text{Me}$ ,  $\text{NNHC}_2\text{H}_4\text{NO}$ , 2,4, 58, 175-9° (decomp.).

649

7. Syntheses with methyl 2-furyl ketone. II.  $\alpha$ -Bromina-  
tion of methyl 2-furyl ketone and its 5-nitro derivative.  
N. Baizabol and S. Hillers. *Lahvja PSR Zindzon Akad.*  
*Paris* 1958, No. 14, 11-12 (in Russian); cf. *C.A.* 53, 11384g.  
--The reaction of  $\alpha$ -bromination of Me 2-furyl ketone and  
Me 5-nitro-2-furyl ketone was investigated, with the use of  
Br<sub>2</sub>, dioxane dibromide (I) and *N*-bromosuccinimide. I  
was found to give the best results with 70% and 80% yields  
of corresponding products, resp.: 18 references. M.D.

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Some new chloromercurifurans. S. Hillers and Z. Zel-  
man. *Laboratory of Chemistry of the USSR Academy of Sciences*, No. 11,  
87-101 (in Russian).—5-Chloromercuri-2-methoxyfurfural,  
m. 88-9° (EtOH) (decompn.), 5-chloromercuri-2-aceto-  
furan (I), m. 142° (decompn.), and 5-chloromercuri-2-  
methylmercaptofuran, m. 88°, were prep.; the semicar-  
bazone of I m. 118° (decompn.). Michael Dymicky

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HILLER, S

Matr: 4820(3)/483d

The question of the multiplicity of the bond between atoms 3 and 4 in the furan ring. S. Hiller and G. Sokolovs (Inst. Org. Synthesis, Latv. Acad. Sci., Riga). *Latvian SSR Zinlatas Akad. Vist.* 1958, No. 12, 126-8 (in Russian); cf. *C.A.* 27, 2358; 31, 6200; 33, 8065; 38, 5701; 43, 4918a; 47, 4360d. —Ultraviolet absorption spectra were detd. from 220 to 520 mμ, for solns. 0.001M solute in abs. EtOH, with an SF-4 quartz photoelec. spectrograph for β,β'-bis(5-nitrofurfurylidene)dihydrazide of succinic acid (I); β,β'-(5-nitrofurfurylidene)dihydrazide of fumaric acid (II); β,β'-(5-nitrofurfurylidene)dihydrazide of acetylenedicarboxylic acid (III); and β,β'-bis(5-nitrofurfurylidene)dihydrazide of 3,4-furandicarboxylic acid (IV). Spectra of I to IV are presented. The % yield of the preps. and their m.p.'s are, resp.; I 90, 236-7 (decomp.); II 97, >300 (decomp.); III 84, 237-8 (decomp.); IV 99, 236-7 (decomp.). Details of the preps. of I-IV are given. The wave lengths (mμ) of peak absorption and the corresponding extinction coeffs. are: I 260 (2000), 360 (2700);

II 240, (2800), 370 (2750); III 300 (2520); and IV 200 (1632), 360 (1030). From the ultraviolet spectra it is believed that IV shows evidence for partial double bond character and thereby establishes evidence for some aromatic character of the furan ring. R. W. Kiser

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HILLERS, S.; Kurgan, B.; Saldabola, N.

A method for the preparation of 5 nitropyromucic acid. In Russian. p. 49.

LATVIAS PSR ZINATNU AKADEMIJA. VESTIS. RIGA, LATVIA. No. 3, 1959

Monthly List of East European Accessions. (EEAI) IC, Vol. 9, no. 2,  
Feb. 1960 Uncl.



GILLER, S

1 3  
1-9/11  
Synthesis in the methyl 2-furyl ketone series. IV.  $\alpha$ -  
Dialkylsulfonium derivatives of methyl 2-furyl ketone and  
methyl 5-nitro-2-furyl ketone. N. Saldahols and S. Hillers.

Latvijas PSR Zinātņu Akad. Vēstis 1959, No. 3, 53-6 (in

Russian); cf. C.A. 53, 91862b.  $[\text{O}:\text{CH}:\text{CH}:\text{CH}:\text{CCOCH}_2\text{SR}_2]^+\text{Br}^-$ , where R = Me(I), Et(II), Bu(III), and isopentyl(IV), were prepd. by treating 0.03 mole bromoethyl 2-furyl ketone with 0.03 mole dialkyl sulfide in 12 ml.  $\text{Me}_2\text{CO}$  at  $0^\circ$  for 3-7 days; the yellowish ppt. was filtered off, washed with  $\text{Me}_2\text{CO}$  and  $\text{Et}_2\text{O}$ , and recrystd. from EtOH; I m. 149-51°, yield 68%; II m. 102-4°, yield 58%; III m. 105-6°, yield 37%; IV m. 98-9°, yield 42%.  $[\text{O}:\text{C}:$

$(\text{NO}_2):\text{CH}:\text{CH}:\text{CH}:\text{CCOCH}_2\text{SR}_2]^+\text{Br}^-$ , where R = Me(V), Et(VI), Pr(VII), Bu(VIII), and isopentyl(IX), were prepd. by treating 0.006 mole bromomethyl 5-nitro-2-furyl ketone with 0.006 mole dialkyl sulfide in 4 ml.  $\text{Me}_2\text{CO}$  off for 1-2 days at room temp.; the yellowish ppt. was filtered off, washed with  $\text{Et}_2\text{O}$ , and pptd. from EtOH soln. by  $\text{Et}_2\text{O}$ ; V m. 133-4°, yield 87%; VI m. 112-14°, yield 84%; VII m. 105-6°, yield 47%; VIII m. 94-5°, yield 35%; IX m. 89-90.5°, yield 64%. Bimal C. Bal-

HILLERS, S.; Stradins, J.; Ratenbergs, N.

Dynamics of the secretion of some new nitrofurans preparation series from the organism; task and study method. In Russian. p. 107

LATVIJAS PSR ZINATNU AKADEMIJA. VESTIS. RIGA, LATVIA. No. 3, 1959

Monthly List of East European Accessions. (EEAI) LC, Vol.9, no. 2, Feb. 1960 Uncl.

GILLER, S

Distr: 4E20(j)/4E3d

Alkylation of furan by olefins. II. Increase of increment of molecular refractions of mono- and polyalkylfurans. S. Gillier and A. Miran. *Letsky PSR Zindyn Akad. Vsesi* 1959, No. 5, 100-11. Treating 2-ethyl-5-acetylfuran with hydrazine yielded 2-ethyl-5-acetylfuran hydrazone (I). Treatment of I with  $\text{Ca(OH)}_2$  at  $200^\circ$  yielded 45% 2,5-diethylfuran, b.  $105-10^\circ$ ,  $n_D^{20}$  1.4700,  $d_4^{20}$  0.8860; maleic anhydride adduct m.  $118^\circ$ . Similarly, starting with 2,5-dimethyl-3-acetylfuran hydrazone, 77% 2,5-dimethyl-3-ethylfuran was prepd., b.  $130^\circ$ ,  $n_D^{20}$  1.4622,  $d_4^{20}$  0.8900. Mol. refractions for these furans were detd. and compared with calcd. values. When the increment of 0.765, characteristic of the furan ring was not added to the sum of at. refractions in calcd. values, they agreed closer with exptl. values.

V. S. Mikhajlov

3  
1-27(NB)  
2

GILLER, S A

Distr: 4E20(j)/4E3d "

Nitration of 2-furyl- $\beta$ -nitroethylene, S. Gillier and M. Berkman. *Laboratory PSR Zindigun Akad. Vses 1959*, No. 5, 115-116.

The yield of 5-nitro-2-furyl- $\beta$ -nitroethylene (I) in nitration of 2-furyl- $\beta$ -nitroethylene by concd. HNO<sub>3</sub> (II) in Ac<sub>2</sub>O was max. when the molar ratio of I to II was 1:4. This modified method gave 70-80% yields when dioxane was used for recrystn. V. S. Mikhailov.

ah

3  
1-99(N/A)  
2

STRADYN' Ya. [Stradins, J.] (Riga); GILLER, S. [Hillers, S. (Riga); DZENE, A.  
(Riga)

Polarographic reduction of some derivatives of 5-nitrofurane,  
possessing chemotherapeutic activity. Vestis Latv ak no.12:71-78  
'59. (EEAI 9:11)

1. Akademiya nauk Latvyskoy SSR, Institut organicheskogo sinteza.  
(Polarograph and polarography)  
(Nitrofurane)

5.4600  
5.3100

67264

5(3)

AUTHORS: Stradin', Ya., Giller, S., Academician SOV/20-129-4-28/68  
AS LatvSSR, Yur'yev, Yu.

TITLE: Polarographic Reduction of 2-Nitrofuran Derivatives and  
2-Nitroselenophene<sup>1</sup> Derivatives

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 816 - 819  
(USSR)

ABSTRACT: The authors ascertained the influence exercised by the substituents in the 5th position of the furan- and selenophene cycle on the polarographic reduction process of the nitro groups in the second position. Thus, they completed the data of publications by new examples. The derivatives mentioned in the title may now be compared to the nitro derivatives of the aromatic series. Table 1 gives the derivatives I-XXV investigated in the present paper under vigorous conditions. It was found that the mechanism of polarographic reduction of the mentioned derivatives is the same as that of nitrobenzene- (Ref 7) and of 2-nitrothiophene (Ref 11) derivatives. Also the semiwave potentials  $E_{1/2}$  of the nitro derivatives of the mentioned series are closely related. The comparison of these series leads to the conclusion that the nitro group of 2-nitrofuran derivatives is the most easily to be

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Polarographic Reduction of 2-Nitrofuran Derivatives and SOV/20-129-4-28/68  
2-Nitroselenophene Derivatives

reduced. This is more difficult in the case of 2-nitrothiophene- and 2-nitroselenophene (which requires by 20-30 mv more) and still more difficult for nitrobenzene derivatives (by 40 mv more). From the investigation of this series of derivatives the influence exercised by the substituents on the polarographic reduction of the nitro group may be quantitatively estimated on the basis of the  $E_{1/2}$  displacement of the substituted compound compared to the non-substituted one. In the series of nitrobenzene and nitrothiophene this displacement may be expressed by the Hammett equation. It may be concluded from the data given by the authors that this holds also for the derivatives mentioned in the title if the same values of  $\sigma$  are assumed for the substituents in the heterocycles as apply for the aromatic series, and if the numerical values of  $\Delta E_{1/2}$  and  $\rho$  are compared for an equal pH value in a weakly acid medium. The behavior of the 2,5-substituted derivatives of the 5-membered heterocycles corresponds to the behavior of the p-substitutes of the aromatic series. The behavior of the former however strongly differs from that of the m-substitutes. This agrees on the whole with the rules of

67764

Polarographic Reduction of 2-Nitrofuran Derivatives and SOV/20-129-4-28/68  
2-Nitroselenophene Derivatives

orientation found in the study of the reactivity of the substituted furans. However, further polarographic measurements are necessary in this case. The influence exercised by the substituents over an additional group -CH=CH- in the side chain is in general not high. The reduction of 5-nitro furfural proceeds in a characteristic manner (Scheme). There are 1 table and 16 references, 9 of which are Soviet. 4

ASSOCIATION: Institut organicheskogo sinteza Akademii nauk LatvSSR (Institute of Organic Synthesis of the Academy of Sciences of the Latvian SSR), Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 21, 1959



[illegible]

SHIMANSKAYA, M.(Riga); GILLER, S.[Hillers, S.](Riga)

Effect on the activity of the content of vanadous catalysts in the  
process of vapor-phase furfurole oxidation. Vestis Latv ak no.9:  
93-102 '60. (KEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut organicheskogo sinteza.

(Catalysts) (Vanadium) (Furaldehyde)

ELYUGER, A.F.; GILLER, S.A.; SHENIGSON, B.S.

Studies on the antilambliar effect of nitrofurans and first results of their use in the treatment of human lamblasis. Med. paraz. i paraz.bol. 29 no.6:646-647 '60. (MIRA 14:2)

1. Iz Instituta organicheskogo sinteza Akademii nauk Latviyskoy SSR, Rzhnskogo meditsinskogo instituta i Respublikanskoy sanitarno-epidemiologicheskoy stantsii Latviyskoy SSR.  
(GIARDIASIS) (FURAN)

SHIMANSKAYA, Mariya Vladislavovna; SLAVINSKAYA, Valentina Aleksandrovna;  
~~GILLER, S. A.~~ akademik, red.; DYMARSKAYA, O., red.; LEMBERGA, A.,  
tekhn. red.

[Analysis of furfurole] Analiticheskoe opredelenie furfurola. Riga,  
Izd-vo Akad. nauk Latvinskoi SSR, 1961. 182 p. (MIRA 14:11)

1. Akademiya nauk Latvyskoy Sotsialisticheskoy Respubliki (for Giller)  
(Furaldehyde)

LUKEVITS, E.[Lukovics, E.](Riga); GILLER, S.[Hillers, S.](Riga)

Reaction of triethylsilane with mercury salts. Vestis Latv ak  
no.4:95-98 '61. (EKAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut organicheskogo sinteza.

(Triethylsilane) (Mercury)

5 3700 2209

24115  
S/197/61/000/004/003/004  
B101/B229

AUTHORS: Lukevits, E., Giller, S.

TITLE: Syntheses in the series of furan-containing organo-silicon compounds. Information I. Reduction of furyl-, phenyl-, and thienyl mercury chloride by means of triethyl silane

PERIODICAL: Izvestiya Akademii nauk Latvyskoy SSR, no. 4, 1961, 99-102

TEXT: The purpose of the present work was to investigate the interaction between organomercury furan derivatives and silanes to obtain furyl silanes. The tests showed that furyl mercury chloride neither reacts with  $\text{SiF}_4$ ,  $\text{SiCl}_4$  in benzene, nor with  $(\text{C}_2\text{H}_5)_3\text{SiCl}$  dissolved in o-xylene. A reaction was not achieved, neither after 24 hr nor at  $145^\circ\text{C}$ . If, however, triethyl silane was used instead of halogen silane, furyl mercury chloride was reduced with separation of mercury. Triethyl silane showed the same reducing effect with thienyl mercury chloride and phenyl mercury chloride. The reaction is accelerated if it is achieved in a solvent (dioxane, alcohol, or pyridine). In anhydrous pyridine the rate of reduction increases in the

X

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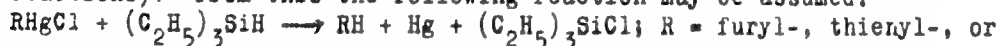
24115

S/197/61/000/004/003/004

B101/B229

Syntheses in the series ...

order: phenyl mercury chloride < furyl mercury chloride < thienyl mercury chloride. If a reaction is achieved without a solvent, or in dioxane, triethyl silane changes to triethyl-chlorosilane. If ethanol is used as solvent, triethyl silane changes to triethyl ethoxy silane. In pyridine a complex is formed from triethyl chlorosilane and pyridine. After decomposition of the reaction mixture by means of water, and extraction by means of ether, the ether extract contains only triethyl silanol and the corresponding hydrocarbon: benzene (identified as m-dinitro benzene), thiophene (identified as thienyl mercury chloride), or furan (proved by qualitative reactions). From this the following reaction may be assumed:



phenyl radical. Difuryl mercury, dissolved in pyridine, could not be reduced by triethyl silane. For the reaction of triethyl silane with phenyl mercury chloride, it is indicated: to 15.7 g phenyl mercury chloride, 4 g pyridine and 5.8 g triethyl silane were added, the solution was boiled for 4hr. After cooling off, 9.6 g Hg (=96%) were filtered off. The fraction distilled off at 80-81°C was nitrified. By crystallization from ethanol the m-dinitro benzene was obtained. At 146 - 148°C triethyl chlorosilane distilled over. If water was added to the solution filtered off from Hg,

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S/197/61/000/004/003/004  
B101/B229

Syntheses in the series ...

extracted with ether, the triethyl silanol distilled over from the extract at 153 - 154°C. The reaction with other mercury compounds was carried out in the same way. The results are shown in Table 2:

Hg compounds,	mole	(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> SiH, mole	solvents	duration of reaction, hr	obtained Hg, %
Phenyl mercury chloride	0.05	0.05	without	55	12.6
ditto	0.1	0.1	dioxane	36	80
furylmercury chloride	0.05	0.05	ethanol	4	98
phenyl mercury chloride	0.1	0.1	pyridine	2	78.4
furyl mercury chloride	0.1	0.1	pyridine	2	86.25
thienyl mercury chloride	0.1	0.1	pyridine	2	98

A paper by Z. M. Manulkin (Ref.10: ZhOKh, 1946, 16, 235) is mentioned.

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24115

S/197/61/000/004/004/004  
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Syntheses in the series ...

There are 2 tables and 14 references: 5 Soviet-bloc and 9 non-Soviet-bloc. The most important reference to English-language publication reads as follows: R. Benkeser, D. Hoke, R. Hickner, J Am Chem Soc., 1959, 80, 5294.

ASSOCIATION: Institut organicheskogo sinteza AN Latv SSR (Institute of Organic Synthesis, AS Latviyskaya SSR)

SUBMITTED: January 13, 1961

VENTER, K.[Venters, K.]; GILLER, S.<sup>A</sup>[Hillers, S.]; LAZDYN'SH, A.[Lazdins, A.]

Synthesis in the series of 5-nitro-2-furylpolyalkenyls and 5-nitro-2-furylpolyalkenes. Report 4. Nitration of  $\beta$ -(furyl)-acrolein and synthesis of certain unsaturated furan aldehydes and ketones. Vestis latv ak no.5:87-97 '61.

1. Akademiya nauk Latvyskoy SSR, Institut organicheskogo sinteza.

LUKEVITS, E.[Lukovics, E.]; GILLER, S.[Hillers, S.]

Interaction of triethylsilane with mercury salts. Izv. AN Latv.  
SSR no.4:95-98 '61. (MIRA 16:1)

1. Institut organicheskogo sinteza AN Latvyskoy SSR.

(Silane) (Mercury salts)

LIDAK, M.[Lidaks, M.]; GILLER, S.[Hillers, S.]

Some reactions of ethylenimine. I. Reaction of ethylenimine with aliphatic and carbocyclic aldehydes and ketones. Vestis latv ak no.5: 99-108 '61.

1. Akademiya nauk Latvyskoy SSR, Institut organicheskogo sinteza.

LIDAK, M. [Lidaks, M.]; GILLER, S. [Hillers, S.]

Some reactions of ethylenimine. II. Reaction of ethylenimine with benzaldehyde, furfural and their derivatives. Vestis Latv ak no.7: 49-58 '61.

1. Akademiya nauk Latvyskoy SSR, Institut organicheskogo sinteza.

(Ethylenimine) (Benzaldehyde) (Furaldehyde)

5 3700

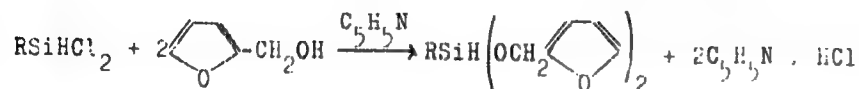
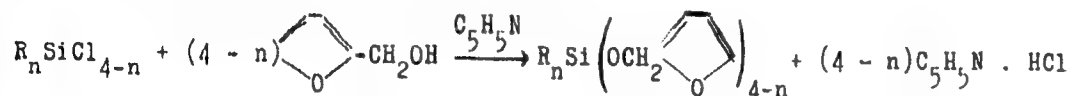
S/197/61/000/007/002/002  
 E117/B101

AUTHORS: Lukevits, E., Romadan, Yu., Giller, S.

TITLE: Syntheses in the series of furan-containing organosilicon compounds, synthesis of furfuryloxy silanes

PERIODICAL: Izvestiya Akademii nauk Latveyskoy SSR, no. 7 (168), 1961, 59-61

TEXT: The authors employed three methods for producing furfuryloxy silanes. Most of these compounds were prepared by the interaction of alkylchlorosilanes  $R_nSiCl_{4-n}$  and alkylchlorosilanes  $RSiHCl_2$  with furfuryl alcohol in the presence of pyridine (method A):

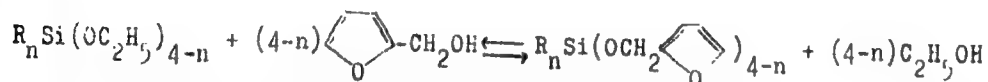


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Syntheses in the series of ...

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The reactions were made in a three-necked flask with mechanical stirrer, dropping funnel, and reflux cooler with calcium chloride tube. In the case of  $C_2H_5SiHCl_2$  not only ethyl difurfuryloxy silane but also ethyl trifurfuryloxy silane were isolated. This indicates that the reaction partially proceeds via the Si-H bond. Re-esterification of ethoxy silanes with furfuryl alcohol (method 5) is simpler from the experimental point of view:



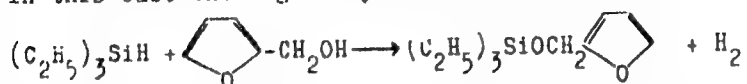
In some cases, however, the reaction proceeds slowly and the separation of the main product is rendered difficult by the impurities of the partially substituted esters. The best results could be obtained when using sodium furfurylate as a catalyst. The reactions were made in a distilling flask with dephlegmator in oil bath. For the production of trialkyl furfuryloxy silanes dehydrocondensation of hydride silanes with alcohols in the presence of metallic sodium (Ref. 11: B. N. Dolgov, N. P. Kharitonov, M. G. Voronkov, ZhOKh, 24, 1178, (1954)) was successfully employed (method E).

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S/197/61/000/007/002/002  
B117/B101

Syntheses in the series of ...

In this case the highest yields were obtained:



Using these three methods the entire series of methyl furfuryloxy silanes and ethyl furfuryloxy silanes as well as methyl ethyl difurfuryloxy silane, ethyl dipropyl furfuryloxy silane, trifurfuryloxy silane and tetra-furfuryloxy silane were obtained (Table 1). Most of the furfuryloxy silanes are colorless liquids with a characteristic smell and turning yellow on standing. At temperatures of 145°C and higher, the furfuryloxy silanes distilled in the vacuum are yellowish. The furfuryloxy silanes are soluble in ether, ethanol, benzene, and toluene, and insoluble in water. On heating they are gradually polymerized while forming brown non-distillable, highly viscous substances. All frequencies characteristic of the disubstituted furans can be observed in the infrared spectrum (Table 2) There are 2 tables and 17 references: 8 Soviet-bloc and 9 non-Soviet-bloc. The three most important references to English-language publications read as follows: Ref. 15: A. Cross, S. Stevens, T. Watts. J. Appl. Chem., 7, ✓



Syntheses in the series of ...

S, 197/61/000/007/002/002  
B117/B101

562 (1957); Ref. 16: N. Wright, M. Hunter. J. Amer. Chem. Soc., 69, 803  
(1947); Ref. 17: A. Katritzky, I. Lagovski. J. Chem. Soc., 1959, 657.

ASSOCIATION: Institut organicheskogo sinteza AN Latv. SSR (Institute of  
Organic Synthesis AS Latviyskaya SSR)

SUBMITTED: May 6, 1961

Table 1: constants of furfuryloxy silanes.

Legend: 1) furfuryloxy silane; 2) synthesis method; 3) boiling temperature,  
°C; 4) pressure, mm Hg; 5) found; 6) calculated; 7) yield %.

Table 2: infrared absorption spectra of furfuryloxy silanes.

Legend: 1) compound; 2) valence vibrations of the furan ring; 3) pulsation  
of the ring; 4) deformation vibrations of the C-H bond; 5) planar; 6) extra-  
planar; 7) references; 8) vibrations of the Si-x bond; 9) deformation  
vibrations; 10) other frequencies.

Card 4/7

SLAVINSKAYA, B.A.; SHIMANSKAYA, M.V.; GILLER, S.A.; IOFFE, I.I.

Kinetics of the vapor-phase contract oxidation of furfurole.  
Kin. i kat. 2 no.2:252-257 Mr-Ap '61. (MIRA 14:6)

1. Institut organicheskogo sinteza AN Latvyskoy SSR, Riga i  
Nauchno-issledovatel'skiy institut organicheskikh poluproduktov  
i krasiteley imeni K. Ye. Voroshilova.  
(Furaldehyde) (Oxidation)

ZAYEVA, S.P.; GILLER, S.A.; GERMANE, S.K.; STRADYN', [Stradin, J.P.];  
ALEKSEYEVA, L.N.; KRUMETRA, L.V.; AL'BERTE, M.A.; AYZPURIETE,  
I.F. [Aizpuriete, I.F.]; KALNBERG, R.Yu. [Kalinberg, R.J.]

Experimental study of furazolin (F-150), a new preparation of the  
nitrofur series. Zhur.mikrobiol., epid. i immun. 32 no.10:  
17-20 0 '61. (MIRA 14:10)

1. Iz Instituta organicheskogo sinteza AN Latvyskoy SSR.  
(FURAN)

AKHIEZER, K.I.; GILLER, S.A., akademik

Nitration of some  $\alpha,\beta$ -unsaturated aldehydes and ketones of the  
Acylen series. Dokl. Ak. SSSR 137 no. 1:83-86 Apr-Apr '61.  
(MIRA 14:2)

1. Institut organicheskogo sinteza AN Latvyskoy SSR. 2. AN  
Latvyskoy SSR (for Giller).  
(Aldehydes) (Ketones) (Nitration)

VENTER, K.K.; GILLER, S.A., akademik; KUCHEROV, V.F.; TSIRULE, V.V.  
[Cirule, V.]; KARKLINYA, A.M. [Karklina, A.]

Syntheses in the domain of 5-nitrofuryl-2-polyalkenals and 5-nitrofuryl-2-polyalkenones. Reaction of carbethoxymethylene-triphenylphosphorane and acetylmethylene-triphenylphosphorane with  $\alpha,\beta$ -unsaturated and polyene aldehydes of the 5-nitrofuran series. Dokl. AN SSSR 140 no.5:1073-1075 0 '61.

(MIRA 15:2)

1. Institut organicheskogo sinteza AN Latviyskoy SSR.
2. AN Latviyskoy SSR (for Giller).  
(Phosphorane)  
(Furan)  
(Aldehydes)

EYDUS, Ya.A. [Eiduss, J.]; VENTER, K.K.; GILLER, S.A., akademik

Effect of terminal substituents in 5-nitrofurylpolyene derivatives  
on their electron spectra. Dokl. AN SSSR 141 no.3:655-658 N '61.  
(MIRA 14:11)

1. Institut organicheskogo sinteza AN Latviyskoy  
SSR i Latviyskiy gosudarstvennyy universitet im. P. Stuchki.
2. AN Latviyskoy SSR (for Giller).  
(Olefins—Spectra)

STRADYEV, YA.P. AND GILLER, S.A.

"Die polarographische untersuchung einiger chemotherapeutika der nitrofuranreihe."

Report submitted to the Oscillopolarography Course and Polarography Symp.  
Jena, GDR 10-15 Sep 1962

GILLER, S.A., otv. red.; BLYUGER, A.F., red.; SHIMANSKAYA, M.V., red.;  
DYMARSKAYA, O., red.; LEMBERGA, A., tekhn. red.

[Furazolidone]Furazolidon. Riga, Izd-vo Akad. nauk Latviiskoi  
SSR, 1962. 145 p. (MIRA 15:12)

1. Latvijas Padomju Socialistiskas Republikas Zinatnu Akaderija.  
Organiskas sintezes institut. 2. Direktor Instituta organicheskogo  
sintezs Akademii nauk Latviyskoy SSR (for Giller). 3. Institut or-  
ganicheskogo sinteza Akademii nauk Latviyskoy SSR (for Shimanskaya).  
4. Kafedra infektsionnykh bolezney Rzhskogo meditsinskogo instituta  
(for Blyuger).

(OXAZOLIDINONE)



SLAVINSKAYA, V.A.; GULEVSKIY, E.K.; SHIMANSKAYA, M.V.; GILLER, S.A.;  
IOFFE, I.I.

Kinetic# of furfurole catalytic oxidation. Kin.i kat. 3  
no.2:276-281 Mr-Ap '62. (MIRA 15:11)

1. Institut organicheskogo sinteza AN Latvyskoy SSR, Riga i  
Nauchno-issledovatel'skiy institut organicheskikh poluproduktov  
i krasiteley imeni K.Ye.Voroshilova, Moskva.  
(Furaldehyde) (Maleic anhydride) (Catalysts)

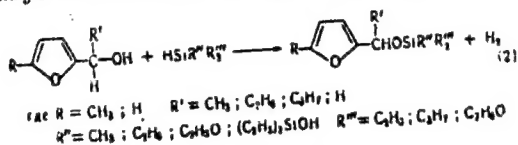
S/020/62/145/004/017/024  
 B110/B144

AUTHORS: Lukevits, E. Ya., Rozhdan, Yu. P., Giller, S. A., Academician  
 AS LatSSR, and Voronkov, M. G.

TITLE: Organosilicon compounds of the furan series. Organosilicon  
 derivatives of furyl carbinols and 5-substituted furfuryl  
 alcohols

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 4, 1962, 806 - 808

TEXT: Furfuryl oxysilanes were produced: (1) by reaction of trialkyl  
 chlorosilanes with furyl alkyl and furyl aryl carbinols, (2) by reaction  
 of silanes with furfuryl alcohol, 5-methyl furfuryl alcohol, and furyl  
 alkyl carbinols



using 10<sup>-5</sup> moles of H<sub>2</sub>PtCl<sub>6</sub> per 1 mole of isopropyl alcohol as catalyst at

Card 1/1 2.

3/020/62/145/004/017/024  
B110/B144

Organosilicon compounds of the ...

80 - 100°C. Their composition and properties are indicated (Table).  
5-nitro-furfuryl oxytrimethyl silane was obtained from ethereal solutions  
of 5-nitro-furfuryl alcohol, pyridine, and trimethyl chlorosilane.  
Silane reacts with  $H_2PtCl_6$  in isopropyl alcohol to give furfuryl oxysilane.  
Dioxane containing 0.05 moles of  $H_2O$  hydrolyzes triethyl silane in the  
presence of  $H_2PtCl_6$  to give triethyl silanol. Triethyl silane reacting  
with triethyl silanol in the presence of  $H_2PtCl_6$  yields small amounts of  
hexaethyl disiloxane by anhydrocondensation. There is 1 table.

ASSOCIATION: Institut organicheskogo sinteza Akademii nauk LatvSSR  
(Institute of Organic Synthesis of the Academy of Sciences  
LatvSSR)

SUBMITTED: March 12, 1962

Table. Furfuryl oxysilanes ( $R'-\text{C}_4\text{H}_3\text{O}-R''$ ). Legend: (1) mode of production,  
(2) boiling point, °C, (3) pressure, mm Hg.

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GILLER, S.A., akademik; MEDNE, K.K.; VENTER, K.K.; GERMANE, S.K.;  
ZILE, A.Ya.

Tuberculostatic effect of certain derivatives of unsaturated  
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(for Giller).  
(Tuberculosis-Prevention) (Furan)